

REMARKS

The Office Action

The Office Action is discussed in detail below. Paragraph numbers refer to the paragraph numbers of the Office Action. Support for the amendments are found the specification as filed. No new matter has been added.

Claim Rejections - 35 USC 102(b)

Paragraph 3 of Office Action

Claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 are rejected under 35 USC 102(b) as being anticipated by Mesters (U.S. Pat. 4,725,573).

Mesters discloses a catalyst containing metallic copper and nickel as active component carried on an inert refractory carriers. The copper-nickel alloy is present on the carrier in small metal particles. Mesters discloses that the particles may have an average particle size of less than 8 nm (80 Angstroms). See Mesters column 2, lines 38-41. However, Mesters fails to teach or suggest a metal particulate having a particle size of less than about 70 Angstroms as recited in applicants' claim 1 (as currently

amended). Likewise, Mesters fails to teach or suggest a nickel and/or nickel alloy particulate having a particle size of less than about 70 Angstroms as recited in applicants' claim 30 (as currently amended).

Hence, Mesters fails to teach or suggest all of the limitations of applicants' claimed invention as recited in applicants' claims 1 & 30. The rejection of claims 1 & 30 under 35 USC 102(b) as being anticipated by Mesters is improper and applicants respectfully request the rejection be removed.

Claims 2-7, 9-10, 15-17, 19-22 & 27-28 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 31-36, 42-44, 47-49 & 53-54 depend from 30 and include all of the limitations of claim 30 as well as additional limitations. Hence, Mesters fails to teach or suggest all of the limitations of claims 2-7, 9-10, 15-17, 19-22, 27-28, 31-36, 42-44, 47-49 & 53-54. The rejection of claims 2-7, 9-10, 15-17, 19-22, 27-28, 31-36, 42-44, 47-49 & 53-54 under 35 USC 102(b) as being anticipated by Mesters is improper and applicants' respectfully request the rejection be removed.

Hence, the rejection of claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 under 35 USC 102(b)

as being anticipated by Mesters is improper and applicants' respectfully request the rejection be removed.

Claim Rejections - 35 USC 103

Paragraph 5 of Office Action

Claims 8 & 37 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 4,725,573).

Claim 8 depends from claim 1 and includes all of the limitations of claim 1 as well as additional limitations. Claim 37 depends from claim 30 and includes all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Hence, Mesters fails to teach or suggest all of the limitations of claims 8 & 37. The rejection of claims 8 & 37 under 35 USC 103(a) as being unpatentable over Mesters is improper. Applicants' respectfully request that the rejection be removed.

Paragraph 6 of Office Action

Claims 11-14 & 38-41 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 4,725,573), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36,

42-44 & 53-54 above, an further in view of Ovshinsky et al ("Ovshinsky"), (U.S. Pat. 5,840,440).

Claims 11-14 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 38-41 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30.

Ovshinsky fails to make up for the deficiencies of Mesters, and the combination of Mesters in view of Ovshinsky fails to teach or suggest all of the limitations of claims 11-14 & 38-41. Hence, the rejection of claims 11-14 & 38-41 under 35 USC 103(a) as being unpatentable over Mesters in view of Ovshinsky is improper and applicants respectfully request it be removed.

Paragraph 7 of Office Action

Claims 18, 24, 45 & 46 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 3,972,829), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 above, and in further view of Flytani-Stephanopoulos et al ("Flytani-Stephanopoulos") U.S. Pat. 4,729,889.

Claims 18 & 24 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 45 & 46 depend from claim 30 and include all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Flytani-Stephanopoulos fails to make up for the deficiencies of ~~Mesters~~, and the combination of Mesters and Flytani-Stephanopoulos fails to teach or suggest all of the limitations of claims 18, 24, 45 & 46. Hence, the rejection of claims 18, 24, 45 & 46 under 35 USC 103(a) as being unpatentable over Mesters in view of Flytani-Stephanopoulos is improper and applicants respectfully request it be removed.

Paragraph 8 of Office Action

Claims 23, 26, 50 & 52 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 4,725,573), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 above, and in further view of Hatura et al "Hatura" (U.S. Pat. 5,506,273).

Claims 23 & 26 depend from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claims 50 & 52 depend from claim 30 and

include all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Hatura fails to make up for the deficiencies of Mesters, and the combination of Mesters in view of Hatura fails to teach or suggest all of the limitations of claims 23, 26, 50 & 52. Hence, the rejection of claims 23, 26, 50 & 52 under 35 USC 103(a) as being unpatentable over Mesters in view of Hatura is improper and applicants respectfully request that the rejection be removed.

Paragraph 9 of Office Action

Claims 25 & 51 are rejected under 35 USC 103(a) as being unpatentable over Mesters (U.S. Pat. 3,972,829), as applied to claims 1-7, 9-10, 15-17, 19-22, 27-28, 30-36, 42-44, 47-49 & 53-54 above, and in further view of Tsou et al "Tsou" (U.S. Pat. 5,171,644).

Claims 25 depends from claim 1 and include all of the limitations of claim 1 as well as additional limitations. Claim 51 depends from claim 30 and include all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Tsou fails to make up for the deficiencies of Mesters, and the combination of Mesters

in view of Tsou fails to teach or suggest all of the limitations of claims 25 & 51. Hence, the rejection of claims 25 & 51 under 35 USC 103(a) as being unpatentable over Mesters in view of Tsou is improper and applicants respectfully request that the rejection be removed.

Claim Rejections - 35 USC 102(b)/103

Paragraph 11 of Office Action

Claims 29 & 55 are rejected under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Mesters (U.S. Pat. 3, 972,829).

Claim 29 depends from claim 1 and includes all of the limitations of claim 1 as well as additional limitations. Claim 55 depends from claim 30 and includes all of the limitations of claim 30 as well as additional limitations. As discussed, Mesters fails to teach or suggest all of the limitations of claims 1 & 30. Hence, Mesters fails to teach or suggest all of the limitations of claims 29 & 55. The rejection of claims 29 & 55 under 35 USC 102(b) or, in the alternative, under 35 USC 103(a) is improper and applicants respectfully request that the rejection be removed.

Analysis of new independent claim 90

Independent claim 90 recites:

A catalyst, comprising:

a metal particulate having a particle size less than about 100 Angstroms, said metal particulate comprising a nickel alloy, said nickel alloy lacking platinum and palladium, said nickel alloy comprising at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe.

Mesters is directed to a copper-nickel alloy catalyst. Mesters contains no teaching or suggestion of a nickel alloy comprising at least one element selected from the group consisting of Al, Co, Sn, Mn, Ti, and Fe. Hence, a rejection of new claim 90 under 35 USC 102 as being anticipated by Mesters is not proper.

Ovshinsky 5,840,440 teaches a hydrogen storage alloy containing modifier elements which may be selected from the group consisting of Ni, Cr, Co, Mn, Mo, Nb, Fe, Al, Mg, Cu, Sn, Ag, Zn, Pd (Ovshinsky, Col 6, line 43-48). Ovshinsky teaches that the hydrogen storage alloy may have a

crystallite size of less than about 200 Angstroms, and more

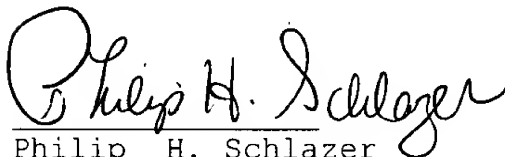
particularly less than about 100 Angstrom (see Ovshinsky col 6, line 1-4). However, Ovshinsky provides no teaching or suggestion of a metal particulate having a particle size of less than about 100 Angstroms. Hence, a rejection of new claim 90 under 35 USC 103 as being unpatentable over Mesters in view of Ovshinsky is also not proper.

Summary

In view of the above remarks and amendments, claims 1-55 as well as new claims 90-100 are in condition for allowance. Applicants respectfully request reconsideration, withdrawal of the outstanding rejections, and notification of allowance.

Should the Examiner have any questions or suggestions regarding the prosecution of this application, she is asked to contact applicants' representative at the telephone number listed below.

Respectfully submitted,



Philip H. Schlazer
Reg. No. 42, 127

Date: July 1, 2003
Energy Conversion Devices, Inc.
2956 Waterview Drive
Rochester Hills, MI 48309
Phone: (248) 293-0440 extension 6260
Fax: (248) 844-2273